Application of microwave drying and sterilization in processing of scented tea

Microwave sterilization drying equipment is one of the important contents of this project. Firstly, the frequency of microwave sterilization equipment was selected, and the effect of microwave on killing green tea was studied in 915 MH microwave oven. Under the condition of microwave power 950 w, 0.1 kg of leaves were thrown every time, and the time of killing green tea was 2-3 min.The microwave drying equipment with 1240 HMZ was also used for 2-3 min. The green leaves were green and green, and no red change was observed after 2 h . In fact, these two kinds of microwave frequencies are widely used in industry, and 950 MHz is mainly used for high-power transistors, and 1240 MHz is basically used for low-power transistors. In order to reduce the manufacturing cost of the equipment and facilitate the future application, the microwave tea processing equipment adopts the relatively low-cost, mature multi-tube microwave technology. Furnace type, the first prototype adopts two microwave oven boxes, six 2450 MHz microwave magnetrons, each side of the box installed "only magnetrons, the total microwave power of equipment is 5.1 km, group control of 100, 83 and 66 microwave power transmission; transmission bandwidth 320 mm, material for PTFE, speed stepless adjustable; The size of the whole machine (length X wide X high) is 4750 X 750 X 1450. The exhaust port is specially designed to facilitate the emission of water vapor. It was found that the total microwave power was small and the heating was uneven. In 2001, a prototype was redesigned. The total microwave power was 6 kw, 10 magnetrons were arranged on the top of each box, and the width of conveyor belt was 420 mm. Efficiency is improved.

Blanching is Drying equipment for scented tea the first heat treatment process in the processing of flower tea drying equipment, and is the key technology to determine the quality of flower tea. In spring tea, summer tea and autumn tea season, the contrast experiment of different killing time was carried out. After killing green tea was processed into Maofeng tea, the sensory evaluation of the prepared tea samples showed that the killing time could be moderate. In the microwave tea processing equipment, the leaf temperature rises from room temperature to about, and the moisture content of the green leaves decreases from 2 minutes to 2 minutes. When the microwave is killed, the temperature of the tea leaves should be increased rapidly, and all microwave power should be switched on. If the killing time is less than 72, the green leaves will appear red mouth phenomenon; if the killing time is too long, the water loss of the green leaves is too much, and the tea is dry and hard, which is not conducive to later rolling and shaping.

When microwave heating is used in the drying of flower tea, in order to reduce the experimental error, the traditional technology is used to kill the green of flower tea, and the orthogonal test is used in the drying section of microwave drying and conventional drying. Conventional drying is divided into two stages, the first drying stage (called gross fire) is hot air drying, and the last drying stage (called foot fire) is hot air drying. When microwave heating is used in drying, full power and medium power) radiation is used. The full power of microwave radiation shows good tea-making performance, no matter whether in raw or full heat.